unless they depart from the scope of the present invention as delivered from the claims annexed hereto, to be construed as included therein.

What is claimed is:

1. An electrically powered brake system which comprises:

a brake wheel mounted on a vehicle wheel for rotation together therewith;

an actuating unit including brake pieces frictionally engageable with the brake wheel;

a drive unit for translating a rotary output of an electric drive motor into a rectilinear reciprocating motion by means of a ball screw mechanism, said rectilinear reciprocating motion being transmitted to the brake pieces as a braking force;

an operating unit for controlling the electric drive motor according to manipulation of an operating member;

a rotation detector including a magnetic encoder and a sensor, the magnetic encoder being mounted on a rotating side member of a wheel support bearing assembly for supporting the vehicle wheel and having a plurality of opposite magnetic poles alternating in a direction circumferentially thereof, the sensor being mounted in face-to-face relation with the magnetic encoder for detecting passage of the opposite magnetic poles;

an anti-skid controller for regulating the braking force, exerted by the electric drive motor, in dependence on the number of revolutions of the vehicle wheel detected by the rotation detector during a braking effected by manipulation of the operating member, to thereby prevent rotation of the vehicle wheel from being locked.

2. The electrically powered brake system as claimed in Claim 1, wherein the actuating unit and the drive unit are provided for each of four or more vehicle wheels equipped in an automotive vehicle and the anti-skid controller is operable to effect a control to all of those vehicle wheels individually.

3. A wheel support bearing assembly for use with an electrically powered brake system as defined in Claim 1, said wheel support bearing assembly comprising an inner race, an outer race positioned radially outwardly of and around the inner race with an annular bearing space defined between it and the inner race, and a series of rolling elements drivingly interposed between the inner and outer races, and a ring-shaped magnetic encoder having a plurality of opposite magnetic poles alternating in a direction circumferentially thereof, said magnetic encoder being mounted on one of the inner and outer races which is rotatable relative to the other.

4. The wheel support bearing assembly as claimed in Claim 3, wherein the magnetic encoder is provided in a sealing unit utilized to seal one of opposite open ends of the annular bearing space delimited between the inner and outer races.

5. The wheel support bearing assembly as claimed in Claim 3, wherein the magnetic encoder comprises a ring-shaped core metal made of a metallic material and forming a part of the sealing unit, and a ring-shaped multi-pole magnet disposed on a surface of the core metal;

wherein the multi-pole magnet is a member having a plurality of opposite magnetic poles N and S magnetized to alternate in a direction circumferentially thereof;

wherein the neighboring opposite magnetic poles N and S are spaced at intervals of a predetermined pitch p that is chosen to be not greater than 1.5 mm, with a single pitch deviation of ±3%, said single pitch deviation being represented by the difference in distance between the magnetic poles detected at the position spaced a predetermined distance from the multi-pole magnet, which is expressed by the ratio relative to a target pitch.